

## **CLAIMS:**

What is claimed is:

1. A method of heating a kiln used in the manufacture of cement clinker comprising burning a fuel comprising an organic waste/mineral by-product mixture.
2. The method of claim 1 wherein said mineral by-product is a coal combustion by-product comprising one or more materials selected from the group consisting of fly ash, bottom ash, fluidized bed ash, boiler slag and flue gas desulfurization by-products.
3. The method of claim 1 wherein said organic waste/mineral by-product mixture comprises an alkaline material.
4. The method of claim 3 wherein said alkaline material comprises one or more materials selected from the group consisting of lime, calcium hydroxide, limestone, cement kiln dust and lime kiln dust.
5. The method of claim 1 wherein said fuel further comprises one or more materials selected from the group consisting of coal, pet coke, oil, natural gas and hazardous waste.
6. The method of claim 5 wherein said fuel further comprises pet coke.
7. The method of claim 1 wherein said organic waste/mineral by-product mixture has a solids content of at least about 50%.
8. The method of claim 1 wherein said organic waste/mineral by-product mixture has a solids content of at least about 75%.
9. The method of claim 1 wherein said organic waste/mineral by-product mixture has a solids content of at least about 90%.

10. The method of claim 1 wherein said organic waste comprises a material selected from the group consisting of dewatered sewage sludge filter cake, animal manure, pulp and paper waste, fermentation waste, shredded paper and cardboard, and food waste.
11. The method of claim 1 wherein said organic waste/mineral by-product mixture has a pH of at least about 9.5.
12. A raw feed for use in forming cement clinker comprising limestone, clay and an organic waste/mineral by-product mixture.
13. The raw feed of claim 12 wherein said mineral by-product is a coal combustion by-product comprising one or more materials selected from the group consisting of fly ash, bottom ash, fluidized bed ash, boiler slag and flue gas desulfurization by-products.
14. The raw feed of claim 12 wherein said organic waste/mineral by-product mixture comprises an alkaline material.
15. The raw feed of claim 14 wherein said alkaline material comprises one or more materials selected from the group consisting of lime, calcium hydroxide, limestone, cement kiln dust and lime kiln dust.
16. The raw feed of claim 15 wherein said alkaline material comprises cement kiln dust.
17. The raw feed of claim 12 wherein said organic waste/mineral by-product mixture has a solids content of at least about 50%.
18. The raw feed of claim 12 wherein said organic waste/mineral by-product mixture has a solids content of at least about 75%.
19. The raw feed of claim 12 wherein said organic waste/mineral by-product mixture has a solids content of at least about 90%.
20. The raw feed of claim 12 wherein said organic waste comprises a material selected from the group consisting of dewatered sewage sludge filter cake, animal manure,

pulp and paper waste, fermentation waste, shredded paper and cardboard, and food waste.

21. The raw feed of claim 12 wherein said organic waste/mineral by-product mixture has a pH of at least about 9.5.
22. A method for reducing NO<sub>x</sub> emissions from exhaust gases generated during the production of cement clinker comprising contacting said exhaust gases containing NO<sub>x</sub> with ammonia liberated from organic waste.
23. The method of claim 22 wherein said ammonia is liberated by raising the pH of said organic waste to at least about 9.5.
23. The method of claim 23 wherein the pH of the organic waste is raised to at
24. least about 9.5 by forming an organic waste/mineral by-product mixture.
25. The method of claim 24 further comprising drying said organic waste/mineral by-product mixture.
26. The method of claim 24 wherein said mineral by-product is a coal combustion by-product comprising one or more materials selected from the group consisting of fly ash, bottom ash, fluidized bed ash, boiler slag and flue gas desulfurization by-products.
27. The method of claim 24 wherein said organic waste/mineral by-product mixture comprises an alkaline material.
28. The method of claim 27 wherein said alkaline material comprises one or more materials selected from the group consisting of lime, calcium hydroxide, limestone, cement kiln dust and lime kiln dust.
29. The method of claim 28 wherein said alkaline material comprises cement kiln dust.
30. The method of claim 25 wherein said organic waste/mineral by-product mixture is dried to a solids content of at least about 50%.

31. The method of claim 25 wherein said organic waste/mineral by-product mixture is dried to a solids content of at least about 75%.
32. The method of claim 25 wherein said organic waste/mineral by-product mixture is dried to a solids content of at least about 90%.
33. The method of claim 22 wherein said organic waste comprises a material selected from the group consisting of dewatered sewage sludge filter cake, animal manure, pulp and paper waste, fermentation waste, shredded paper and cardboard, and food waste.